NOTES ON *ATYLOTUS* AND DESCRIPTION OF A NEW SPECIES FROM EASTERN NORTH AMERICA (DIPTERA: TABANIDAE)[1]

L.L. Pechuman[2]

ABSTRACT: *Tabanus incisuralis* Macquart and *Tabanus intermedius* Walker belong in the genus *Atylotus*. *a. incisuralis* is not Nearctic and the first available name for the North Americal species currently called *incisuralis* is *insuetus* Osten Sacken. *A. intermedius* is regarded as a distinct species. *Atylotus woodi* from eastern North America is described as new.

Through the kindness of John E. Chainey of the British Museum (Natural History), I have been able to examine the type material of *Tabanus incisuralis* Macquart (1847) and of *Tabanus intermedius* Walker (1848). Both are species of the genus *Atylotus* Osten Sacken (1876) as has been recognized by previous workers.

Atylotus incisuralis (Macquart)

The type locality is given as "America" but the type shows no close relationship to any North American species. Its affinities seem to be with a group of Palaearctic species that includes *fulvus* (Meigen), *loewianus* (Villeneuve) and *quadrifarius* (Loew). It is quite different from the Nearctic species now called *incisuralis* (Philip, 1965). The first available name for the latter is *insuetus* (Osten Sacken, 1877) according to Philip (1965).

Atylotus intermedius (Walker)

This species has been placed as a synonym of *incisuralis* but is quite different from the type of *incisuralis* which, as noted above, is not Nearctic and also is distinct from *insuetus*. *A. intermedius* has a small rounded basal callus and a linear median callus (Fig. 1) whereas *insuetus* has two roundish callli (Fig. 2). The western *A. tingaureus* (Philip) (Fig. 3) and the eastern species described below (Fig. 4) have calli similar to *insuetus*. All other Nearctic *Atylotus* lack frontal calli.

In addition to the syntype female of *intermedius*, which I hereby designate as lectotype and have so labeled, and the male syntype, both from St. Martin's Falls, Albany River, Ontario, I have seen a female from Isle

[1]Received October 18, 1980.

[2]Department of Entomology, Cornell University, Ithaca, New York 14853.

Royale, Michigan, and a female and male from Chippewa County, Michigan. The male agrees well with the syntype male of *intermedius*. Both have long hairs on the upper occipital border that recurve over the eye (Fig. 5) as is the case in most eastern species and the western *Atylotus tingaureus* (Fig. 7), but is not the case with *insuetus* (Fig. 6) or the species described below (Fig. 8). I regard *intermedius* as a distinct species.

Atylotus woodi n. sp.

Holotype ♀. Length, 10.5 mm.

Head. Frons 3 times as high as width at base, grayish yellow pollinose with recumbent yellow hairs and more erect black hairs near vertex; frons with two black roundish callosities well separated from each other and the eye margins (Fig. 4). Eye yellow brown (greenish brown in life) with (in life) a purple diagonal band extending from edge of frons ¾ across eye; eye with many fine, pale, short hairs. Subcallus pollinose, concolorous with frons. Upper portion of cheeks concolorous with subcallus, with many yellow hairs; lower portion of cheeks more gray than yellow; beard pale yellowish gray. Antenna wholly yellow, scape and pedicel paler than flagellum; scape and pedicel with stiff black hairs plus fine pale hairs below on scape; basal plate of flagellum with tooth barely indicated; length of basal plate 1.3 times greatest width and 1.3 times length of annulate portion. Palpus very pale yellow; first segment with long, fine, pale hairs; second segment rather stout at base, gradually tapering to a point, with stiff black hairs and fine pale hairs below near base. Proboscis brown.

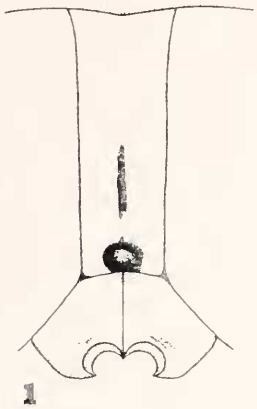
Thorax. Dorsum, including scutellum, very dark gray, somewhat paler gray anteriorly, with a single narrow middorsal dark line reaching nearly to scutellum, and with recumbent yellow hairs with a few black hairs intermixed; prescutal lobe (postpronotal lobe) grayish yellow with stiff black and fine yellow hairs. Pleura gray with pale yellow hairs above and gray hairs below. Legs yellow, fore tarsus brown and middle and hind tarsi darker yellow; fore femur and fore and middle tibiae mostly black haired; middle and hind femora mostly yellow haired; hind tibia with black and yellow hairs and tibial fringe black. Wing membrane clear including costal cell; veins brown; venation normal with all posterior cells wide open at margin and no spur at bifurcation of third longitudinal vein (R_{4+5}). Halteres yellow.

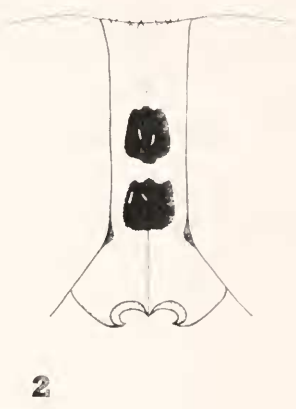
Abdomen. First tergite dark gray with posterior sublateral margins yellow and yellow haired; tergites 2, 3, and 4 with a median rectangular fuscous spot completely crossing tergite (except for barely indicated pale posterior border of tergites 2 and 3) forming a broad median stripe; laterally these tergites yellow with concolorous hairs and at edge of each tergite a vague dark spot with dark hairs; tergite 5 with yellow area greatly reduced and following tergites all dark except for narrow yellow stripe at extreme edge; the integument shows no pale median markings but patches of yellow hairs present in center of tergites 2, 3, and 4. The venter of abdomen completely yellow and yellow haired.

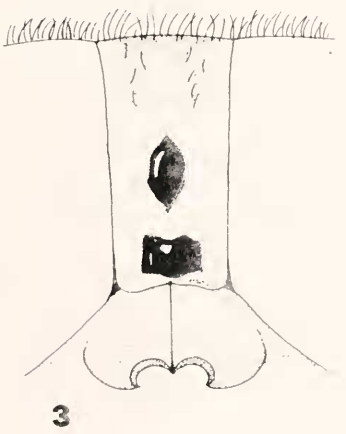
Allotype ♂. Length 10.25 mm.

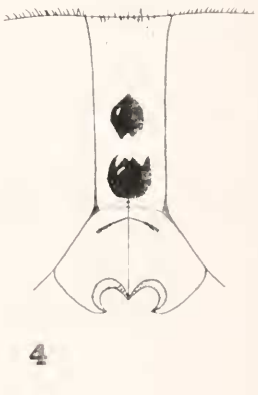
Head. Frontal triangle and upper cheeks yellowish gray, the latter with pale yellow hairs; lower cheeks gray; beard white. Eye brownish green with traces of a short diagonal purple stripe; line of demarcation between large upper eye facets and smaller lower facets quite distinct below, but smaller facets extend laterally around larger facets and above them where the sizes blend with no line of separation; upper occipital fringe of pale, short hairs not recurved over upper eye margin (Fig. 8); eye heavily haired with hairs pale and much longer than in female. Antenna as in female but basal plate relatively more slender with length 1.54 times greatest width; basal plate 1.18 times length of annulate portion. Second palpal segment 1.6 times as long as thick, pale yellow, almost white, with long black and fine white hairs.

Thorax. Similar to female but dark median line and two pale stripes flanking it are nearly obsolete; hairs of dorsum much longer than in female, pale grayish yellow. Legs as in female









Figs. 1-4. *Atylotus* females, frons. 1. *intermedius*, 2. *insuetus*, 3. *tingaureus*, 4. *woodi*.

but apex of fore tibia grades to a darker yellow. Wing as in female.

Abdomen. Dorsum much like female but black median band narrower so that yellow lateral margins more extensive and dark lateral spots obsolete although dark hairs in this area remain. Sternites 1 and 2 with small gray median spot and sternites 6 and 7 mostly gray; remainder of venter yellow with yellow hairs except sternite 7, which has black hairs.

Holotype and Allotype. S. of Lot 31, Conc. Gore, Puslinch Twp., Wellington Co., Ontario, 15 August 1963 (L. L. Pechuman). Canadian National Collection No. 16288.

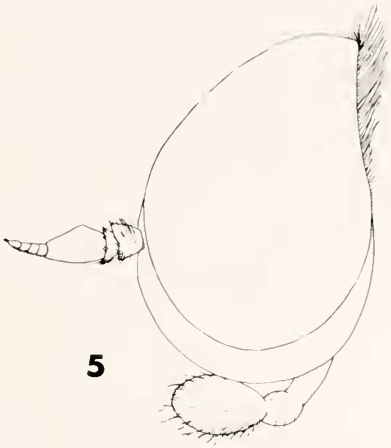
Paratypes. ONTARIO: Same data as holotype and allotype, 12 ♀♀, 8 ♂♂; Same locality as types, 24, 28, 29 August 1962, 5 ♀♀, 8 ♂♂ (D.M. Wood), 1, 2, 7, 12 August 1963, 25 ♀♀, 22 ♂♂ (H.J. Teskey) plus 12 ♀♀, 7 ♂♂ reared by H.J. Teskey in 1963, 1964, and 1965; Spencer Ck. Cons. Auth., Beverley Swamp, 1 mi. N. of Valens, 30 August 1962, 1 ♀ (R.M. Idema); Moosonee, 1 ♂ reared by H.J. Teskey in 1961. ILLINOIS: Cedar Lake, 4 August 1906 "bog", 1 ♀. WISCONSIN: Kegonsa State Park, 11 August 1970 "marsh area, trap-CO_2", 1 ♀ (Eugene Devenport).

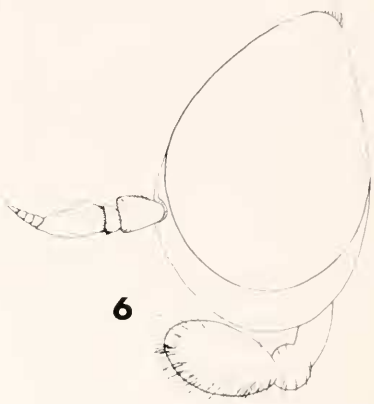
Paratypes will be deposited in the collections of the British Museum (Natural History), California Academy of Sciences, Canadian National Collection, Cornell University, Illinois Natural History Survey, Museum of Comparative Zoology, Ohio State University, U.S. Museum of Natural History, University of Wisconsin, J.F. Burger and G.B. Fairchild.

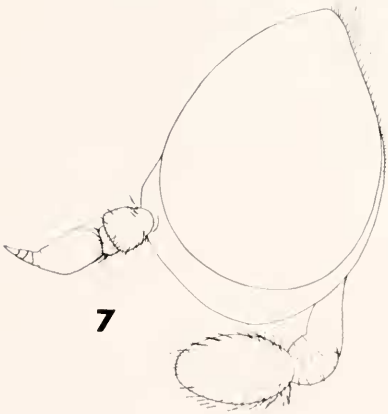
Variations. The series is quite uniform. Length of females ranges from 9.25 to 10.5 mm with a median and mean of 10.25 mm; the males range from 10 to 11.5 mm with a median of 10.5 and a mean of 10.75 mm. The ratio of width of frons at base to height varies from 2.9 to 3.4 with a median and mean of 3.1. The ratio of length of basal plate to its greatest width varies from 1.2 to 1.4 (median 1.29, mean 1.28) in the females and in the males from 1.18 to 1.5 (median 1.31, mean 1.35). The ratio of the length of the basal plate to the annulate portion of the third antennal segment varies from 1.27 to 1.4 (median 1.33, mean 1.32) in the females and in the males from 1.11 to 1.24 (median 1.18, mean 1.17). A few males have the extreme base of the hind femur vaguely darkened. In the reared Moosonee male, the hairs on the dorsum and pleura of the thorax and on the abdomen are bright yellow and the median dark markings on the abdomen are reduced on tergites 3, 4, and 5.

Atylotus woodi is the only species found in eastern North America that has frontal callosities, except for *intermedius*, which has a linear median callus, not rounded as in *woodi*. The males lack the long recurved hairs on the upper occipital margin that are present in all other eastern species, including *intermedius*.

The affinities of *woodi* lie with the western *Atylotus insuetus* and related forms although it seems to be well separated geographically from these. *A. insuetus* and *A. tingaureus* usually have the hind femur partly or wholly darkened, the prescutal lobe often is concolorous with the rest of the mesothorax, the venter of the abdomen is extensively darkened and the bifurcation of the third longitudinal vein frequently has an appendix. *A. insuetus* is very variable in abdominal color, varying from all dark to mostly yellow; when the abdomen is yellow laterally as in *woodi*, the median dark marking is usually divided into two stripes by a pale line or series of triangles; in the few exceptions to this, the middle and hind tibiae were partly black, the prescutal lobe dark and the venter had extensive black markings. *Atylotus utahensis* (Rowe and Knowlton), considered by Philip (1965) to be a variety of *insuetus*, has all yellow legs but the abdominal pattern is obsolete and the frontal callosities are usually greatly reduced.







Figs. 5-8. *Atylotus* males, lateral view of head. 5. *intermedius*, 6. *insuetus*, 7. *tingaureus*, 8. *woodi*.

Unlike *A. insuetus*, which attacks man and animals, *A. woodi* did not attack collectors in the Puslinch area. Both sexes were swept from vegetation. The capture of the Wisconsin specimen in a CO_2-baited trap may indicate that it occasionally seeks a blood meal. Its habits may be similar to *A. ohioensis* (Hine), which only occasionally attacks man or enters CO_2-baited traps even in areas where it is known to be fairly abundant.

It is a pleasure to name this species for D. M. Wood, Biosystematics Research Institute, Ottawa, who first called my attention to an eastern *Atylotus* with frontal calli. *A. woodi* is the species reared by H.J. Teskey as "*Atylotus* species C" (1969). He describes the immature stages and gives a detailed description of the habitat.

ACKNOWLEDGEMENTS

I wish to thank Dr. Teskey for the loan of specimens. I also wish to thank Dr. Teskey and Dr. John J.S. Burton, who read the first draft of this paper, and offered valuable suggestions. The figures were drawn by Catherine Komar Outlaw.

LITERATURE CITED

Macquart, J. 1847. Dipteres exotiques nouveaux ou peu connus. 2nd supplement. Soc. Roy. des Sci. de l'Agr. et des Arts, Lille, Mem. 1846: 21-120.

Osten Sacken, C.R. 1876. Prodrome of a monograph of the Tabanidae of the United States. Part II. The genus *Tabanus*. Boston Soc. Nat. Hist. Mem. 2: 421-479.

Osten Sacken, C.R. 1877. Western Diptera: Descriptions of new genera and species of Diptera from the region west of the Mississippi and especially from California. (U.S. Dept. Int.) U.S. Geol. and Geog. Survey of the Terr., Bul. 3: 189-354.

Philip, C.B. 1965. Family Tabanidae. *In* A catalog of the Diptera of America north of Mexico, pp. 319-342 by Alan Stone *et al.* U.S.D.A., A.R.S., Washington.

Teskey, H.J. 1969. Larvae and pupae of some eastern North American Tabanidae (Diptera). Ent. Soc. Canada Mem. 63: 1-147.

Walker, F. 1848. List of the specimens of dipterous insects in the collection of the British Museum. Vol. 1, pp. 1-299. London.